REMARKS

Independent claim 13 is amended to define the specific surface area of the silica used in the present invention, based upon such disclosure as that in paragraph [0026] of the specification. Also, the feature of claim 14 is incorporated into claim 13, and claim 14 is cancelled, without prejudice. No new matter is introduced by this Amendment. Claims 2, 3, 5-13, and 15 are pending in the application.

In the Office Action of July 1, 2008, claims 2, 3, 5-13, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 02/20655 A1 (Konno '655) in view of WO 03/085010 A1 (Matsuda). Office Action, pages 2-3. Claim 10 was rejected over Konno '655 and Matsuda in view of US 6,407,153 B1 (von Hellens). Office Action, pages 3-4. Inasmuch as all of the present claims now require the feature of former claim 14 – which was not rejected on either of the foregoing grounds – the foregoing grounds of rejection do not apply to the claims now before the Examiner.

Claim 14 was rejected over Konno '655 and Matsuda in view of US 2002/0111418 A1 (Konno '418). Office Action, page 4. To the extent that it might be applied to claims 2, 3, 5-13, and 15 currently pending in this application, this ground of rejection is respectfully traversed.

Konno '655 teaches a method of producing a diene-based rubber-inorganic composite material which comprises mixing an aqueous dispersion of a diene-based rubber with an aqueous dispersion of an inorganic compound. However, Konno '655 does not teach mixing such dispersions in the presence of a cationic polymer having a weight average molecular weight of 1000 to 1,000,000 to facilitate co-coagulation and form toluene insoluble components[1].

To compensate for these deficiencies in Konno '655, the Examiner cites Matsuda and Konno '418.

The Examiner contends that Konno '418 teaches a blend of dispersions of a diene-based rubber and silica being mixed with a cationic polymer. Applicants respectfully disagree.

[1] Applicants' claims require, among other things, "co-coagulating an aqueous dispersion ... to obtain a co-coagulated mass; heating said co-coagulated mass ... to obtain a conjugated diene rubber – silica mixture (A) containing at least 30 wt% of toluene insoluble components."

Contrary to the Examiner's position, Konno '418 does not disclose a silica dispersion – instead Konno '418 teaches an aqueous solution of a silicate. See e.g. claim 1 of Konno '418. In Konno '418, the dispersion of a diene-based rubber and the silicate are co-coagulated with a cationic substance and simultaneously form the silicic acid compound (silica). When using the method of Konno '418, one cannot readily control the specific surface area of the resulting silicic acid compound (silica). A composition in which the dispersed silica has a specific surface area as large as 500 m^2/g forms in the process of Konno '418[2], which leads to reduced tensile strength in the resulting composition. Konno '418 is entirely silent as to the specific process features now incorporated into claim 13. Therefore, Konno '418 does not combine with Konno '655 to render the present invention obvious.

Matsuda is silent as to co-coagulation of a conjugated diene rubber and silica in the presences of cationic polymer. Therefore, Matsuda, too, fails to combine with Konno '655 to render the present invention obvious.

Applicants respectfully submit that neither Konno '418 nor Matsuda nor any combination thereof remedies the acknowledged deficiencies of the Konno '655 reference. Accordingly, claims 2, 3, 5-13, and 15 in their present form are clearly distinguished over the prior art.

Contact information

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Respectfully submitted,

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[2] In the present invention, the maximum specific surface area of the silica component is 300 m^2/g, which is significantly lower than 500 m^2/g.